PS POWERSOURCE

SUMMER 2016 » SOLAR PROGRAMS » G.R.I.T.S. » GIANT CEMENT » BROOKGREEN GARDENS

from the CEO

At the American Public Power Association's National Conference last month, APPA President and CEO Sue Kelly spoke about issues that keep utility leaders up at night. Chief among them are cyber security, new regulations, distributed generation like rooftop solar power, and workforce planning.

These are all critical issues for every utility, including Santee Cooper. As I think about initiatives we have in place for each of these areas, I am confident that Santee Cooper is preparing in a way that minimizes costs to customers where we can and protects utility employees and assets as well.

> In terms of cyber security, the Santee Cooper Board of Directors recently approved a new executive officer position, chief information officer, and named Dom Maddalone to fill it. Dom possesses 24 years of national and global IT executive experience, and he has the experience necessary to effectively shape strategic direction and protection of our IT resources and cybersecurity matters.

> Regulations come with a price tag. Generally, Santee Cooper strives to anticipate and plan for regulations, which generally means we can achieve compliance for a lesser financial impact. The Clean Power Plan is no exception. Although the CPP is currently caught in the court system, Santee Cooper has been preparing for carbon restrictions for years and we are better positioned than many utilities when those restrictions do take force.

> Distributed generation primarily means rooftop solar and other behind-the-meter (customer-owned) power right now. Santee Cooper recently rolled out new rooftop and community solar incentives that help our customers make the initial investment, but in a way that is fair to all customers including those who aren't interested in solar power. Visit www.santeecoopersolar.com to learn more.

> Workforce planning is essential in today's energy industry. Santee Cooper is in the middle of a stretch of years where nearly a third of our workforce is eligible to retire. Several years ago we launched new programs to strengthen our leadership ranks, partner with technical colleges to create apprenticeship programs to train the next generation of skilled workers in our plants, and began a continuous improvement movement to address workforce and workplace efficiency.

Ms. Kelly is right to identify some of the major issues facing utilities today. You have my word that Santee Cooper is focused on each of these as we continue working to be a leading resource for improving the lives of all South Carolinians.

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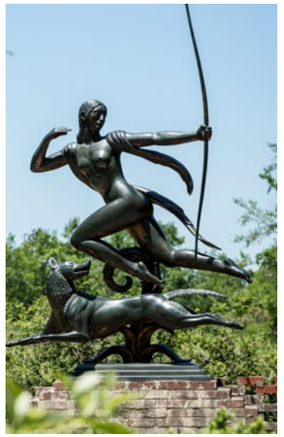


24 Garden of Delights: Brookgreen Gardens
Nicole A. Aiello

About the Cover
Photo by Jim Huff

This limestone statue, titled Griffin, was carved in 1917 by Paul Manship. A mythical beast with the body of a lion and the wings and head of an eagle, griffins are thought of by some as particularly magical, powerful and majestic. It is fitting that this griffin stands guard at Brookgreen Gardens, which is considered magical and majestic by many of its visitors.

santee cooper®

HERE COMES THE SUN

As the sun peaked over the horizon at Colleton Solar Farm at 7:08 a.m. on Friday, April 1, 2016, the dawn of a new day and a whole new era for solar power in South Carolina emerged. Those first rays heralded the arrival of Santee Cooper Solar Share, the Palmetto State's first community solar offering. It also marked the genesis of Santee Cooper's rooftop solar rebate programs – Solar Home and Solar Business.

BY PHIL M. FAIL

"Santee Cooper has been the state's leader in solar power for a decade, and we are pleased to open yet another chapter with South Carolina's first community solar program," said Lonnie Carter, Santee Cooper president and CEO. "Our rooftop and community solar programs and related incentives will bring the benefits of solar power to all of our customers, whether they own a roof or not."

Solar generation presents a good opportunity for home and business owners to join the green revolution and offset energy use and control costs. Not every home or business is suited for onsite solar panels, though. According to various industry sources, only between 15 and 25 percent of residential rooftop areas are suitable for installing photovoltaic, or PV, systems.

There are many reasons why solar may not work for everyone…some structures are shaded by trees or adjacent buildings, some roofs face the wrong way and don't get enough sun, and some neighborhood associations and architectural review boards prohibit the installation of solar panels. Home or business owners may have roofs that weren't engineered to accommodate the addition of solar panels. Plus, some people find the panels aesthetically displeasing, while others don't want to bother with installation or upkeep of solar panels.

For renters, investing in rooftop solar panels just doesn't make financial sense and the landlord may not allow it. Those who own or occupy the bottom or middle floors of a multistory building don't even have a roof. Santee Cooper Solar Share evaporates all


Photo by Paul Zoeller

Below: Solar arrays at Colleton Solar Farm, which produces energy for Solar Share customers.

THE POWER GENERATED BY YOUR SOLAR SYSTEM CAN OFFSET SOME OF YOUR ENERGY USAGE WHEN IT IS GENERATED AT THE SAME TIME IT IS BEING USED.

Above:
Mike Poston, Vice President of Retail Operations

of those impediments like a water drop on 95 degree asphalt.

These and other obstacles to rooftop solar across the country have helped seed the growth of community solar farms. Our community solar program, **Santee Cooper Solar Share**, offers subscriptions in 1-kilowatt (kW) increments to electricity generated at the Colleton Solar Farm in Walterboro. The current price for a subscription is $1.88 per watt, or $1,880 per kW, and Santee Cooper will offset that initial cost with rebates of $1.00 per watt, or $1,000 per kW. The net cost to customers is 88 cents per watt, or $880 per 1-kW subscribed. By offering these substantial rebates, Santee Cooper is encouraging participation in the program and rewarding its customers for purchasing Solar Share subscriptions. At this time, rebates are capped at 4 kW per customer.

For subscribing, customers will receive a proportional share of the energy produced by the solar farm through Dec. 20, 2033. This will appear on their Santee Cooper bills as an offset to energy used or as a solar energy credit. The amounts will differ monthly depending on how much solar power is generated versus how much electricity the customer is using concurrently.

Solar Share subscriptions will be available for purchase through 2018 or until a total of 1 megawatt (MW) is subscribed. The purchase price and rebate amount will be evaluated and may be adjusted each year.

"Our solar offerings are very inclusive," explained Mike Poston, vice president of retail operations. "Business and homeowners eager to 'go solar' can participate in our Solar Home and Solar Business programs by working with our Trade Allies, certified by the North American Board of Certified Energy Practitioners or NABCEP, to design and install their solar systems. If rooftop solar doesn't work for customers, they can subscribe to our Solar Share community solar program. Either way, customers can receive upfront rebates, and monthly energy credits for excess electricity they generate and provide back to Santee Cooper."

SUNNY DAYS AHEAD

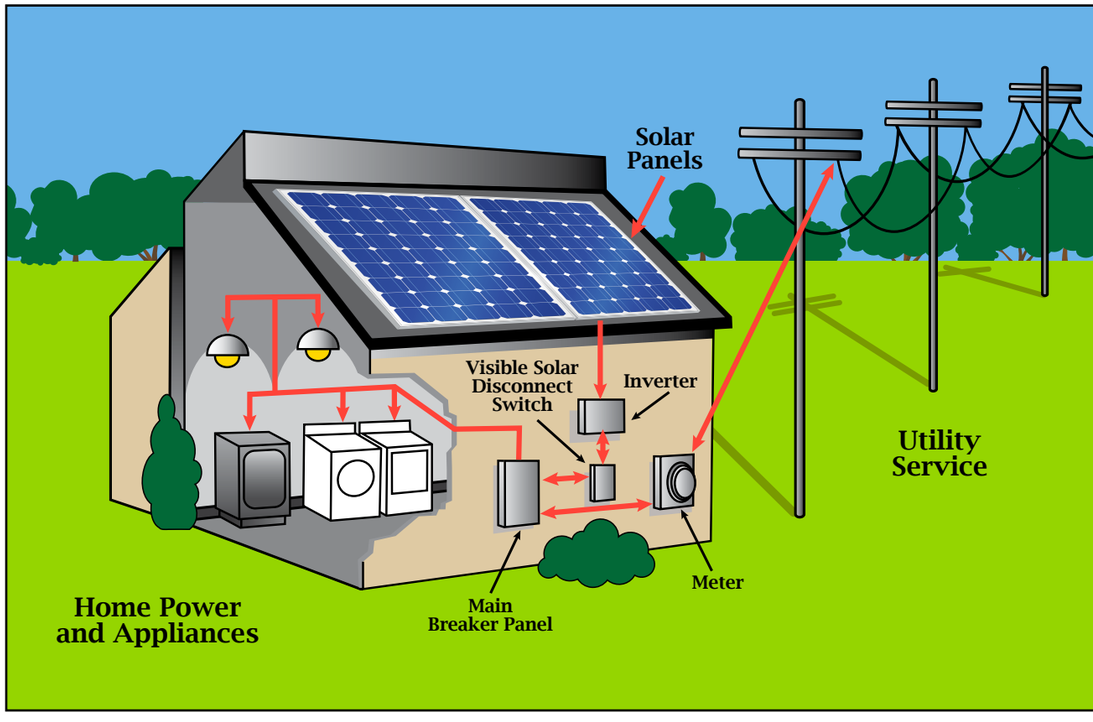
Think of the sun as a huge power plant sending out waves of energy-bearing photons. We experience this energy everyday as heat and light. When these electromagnetic particles strike the material that makes up PV cells, a portion of the energy they carry is converted into electric current. Individual cells are wired together to form PV arrays, and the electricity they harvest is passed through an inverter, changing it from DC, direct current, to AC, alternating current, which is what we use in our homes and businesses.

Solar panels don't have an on/off switch; they generate electricity whenever sunlight falls on them. To protect the grid, and the workers who service it, each point of connection must be able to be isolated from the system. Customers who install solar panels, or any other generation, must agree to the standards set forth in the interconnection agreement, which explains that an isolation device is necessary to keep lineworkers, the public and the grid safe.

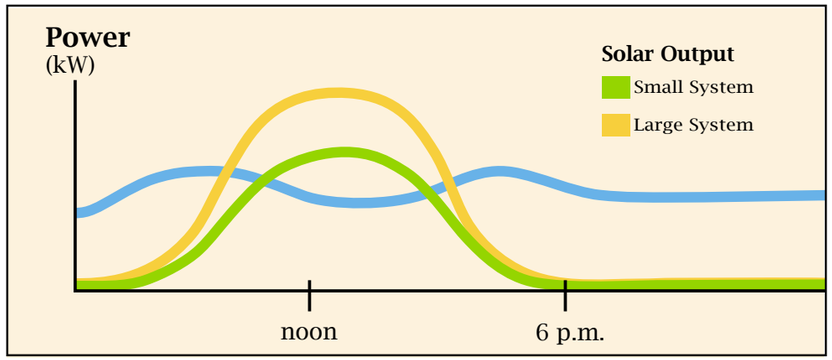
Optimum benefit is gained by using power as it is generated. The power generated by your solar system can offset some of your energy usage when it is generated at the same time it is being used. So, to make the most of an investment in solar energy, it's important to know what time of day you use the most electricity. If your business or household typically uses a lot of electricity when solar panel output is at its peak, which is usually in the afternoons, you'll get the most benefit. On the other hand, if your home is unoccupied during the day or if most of your business is done after sundown, you could end up exporting some of your generated electricity back to the grid instead of using it.

When it comes to Solar Home and Solar Business rooftop programs, rebates are set as a one-time payment of $1.30 per watt paid based on the system's rated capacity (watt AC) and capped at $5,200 per account number. Keep in mind that you may also be eligible for state and federal tax incentives, and nonprofit customers are eligible for an additional rebate of $0.25/watt (AC), also capped at 4 kW. Solar Home and Solar Business participants will be issued the rebate upon verified completion of all solar PV system requirements. In addition to the rebate, Solar Home and Solar Business customers also will receive energy credits on their bills for the energy they don't use that goes back on the grid.

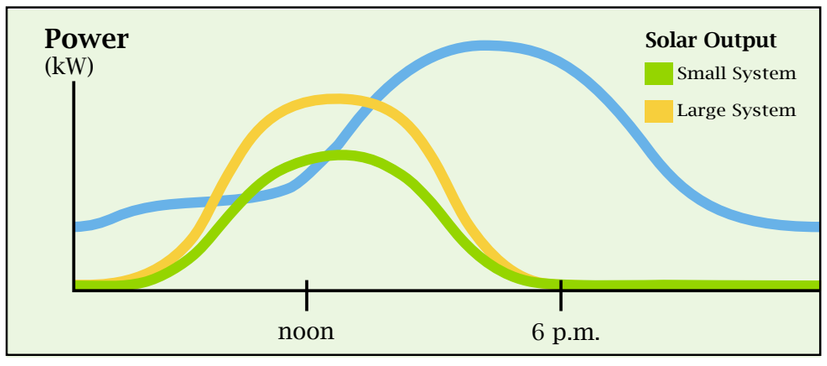
Below:
Solar panels convert some of the sun's energy into electric current. As the current passes through an inverter, it changes it from DC (direct current) to AC (alternating current). AC is used in homes and businesses to power lights, appliances, etc. Extra power produced by solar panels can be exported through the meter to the grid. Santee Cooper supplies power through the grid to customers when they do not make or are not making enough solar power to power their homes and businesses. The disconnect switch, or isolation device, helps keep electric workers, the public and the grid safe.



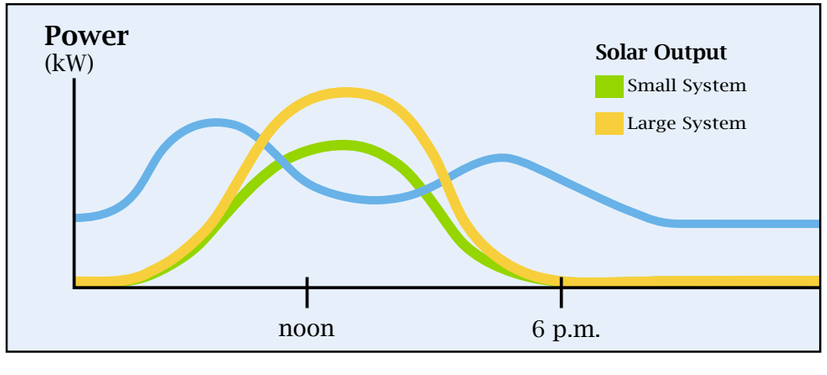
SEASONAL POWER USAGE



Spring/Fall Use of a Typical Home



Summer Use of a Typical Home



Winter Use of a Typical Home

Solar customers will get the most benefit from solar energy if they use power as it is generated. These charts compare typical solar output and typical home energy use during the spring/fall, summer and winter timeframes.

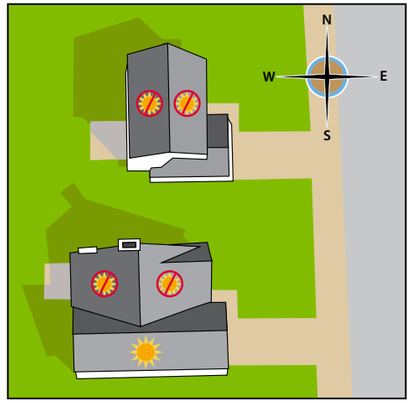
Even though solar energy has an important role to play, the sun doesn't shine all the time, especially early on cold winter mornings when electric demand is typically highest, on hot, humid summer evenings or during those pop-up thunderstorms. So solar customers also buy power from Santee Cooper. When customers' solar panels produce more energy than the customer can use, Santee Cooper will buy that excess power. That means whether buying or selling electricity, rooftop solar customers still use the grid – our network of power plants, poles, lines and meters.

All participants in Santee Cooper's solar programs will be enrolled in the Distributed Generation (DG) Rider. The DG Rider is important in many ways, but mostly because it helps protect employees who are working on the grid and allows for solar customers to pay their fair share of fixed costs and to serve them for relaying any unused solar energy back onto the grid.

The DG Rider includes a standby fee of $4.40 per kW per month for homes and $4.70 per kW per month for businesses. The standby fee is necessary to recover those fixed costs, including maintenance of generation, transmission and distribution systems, to serve solar customers that wouldn't otherwise be collected via energy charges, and to ensure those fixed costs are not shifted to non-solar customers.

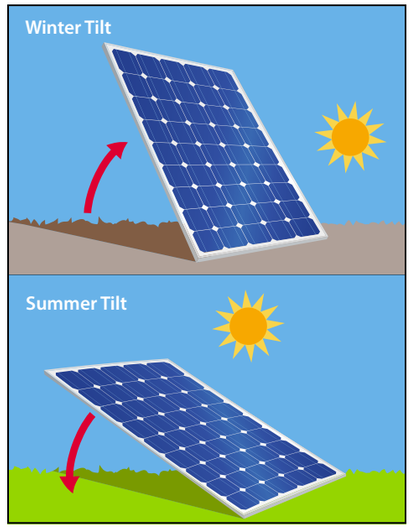
Program participants will also receive an energy credit of 3.8 cents per kWh for any excess solar power produced that goes back on the grid. As an added incentive, the first 500 residential rooftop customers to sign up for solar programs will receive an additional 3 cents per kWh for excess electricity returned to the grid.

Solar panels should continue operating for at least 20 years, although some are rated at 25 years and higher, and the residential and commercial rooftop incentives are designed to help customers recover their purchase costs in about half that time.



Above: Placement of rooftop solar panels is key to their effectiveness. Some roofs are not ideal for rooftop solar.

Below: Solar panel angles should be adjusted seasonally to maximize their sun exposure.



The Colleton Solar Farm is currently two years old, and so the Solar Share investments made in 2016 will cover about 18 years. Payback for Solar Share customers is expected to be between 9.2 and 10.2 years, depending on subscribed capacity, energy use and other variables.

That means, whether you're a Solar Share, Solar Home or Solar Business customer, you could have up to 12 years of "free" solar energy offsetting your daily use.

No matter how you look at it, that's just another reason to appreciate a sunny, South Carolina day.

Ground Right in The South

G.R.I.T.S.

BY SUSAN MUNGO

PHOTOGRAPHY BY JIM HUFF

It is said true Southerners know their grits, but how many actually know how their grits make it to the table or where they come from? South Carolinians can feel a little satisfaction in knowing that the grits they are enjoying are likely ground somewhere between the foothills of the Carolinas and one of our seaside towns.

Only a true Southern delicacy could make the masses happy both in the local drive-through and while sitting down to a luxurious dinner. That is just one of the reasons we love our grits.

No, not oatmeal, not porridge... *grits*.

Opposite page:
A specialty corn grows in a test field at Geechie Boy Mill on Edisto Island, where new varieties are tested for growth and taste potential.

This page:
Freshly ground corn meal is bagged daily at Suber's Mill in Greer, where the well-worn sign welcomes visitors.

While it is fair to give the nod to Native Americans for the original know-how of turning corn into such a delicious delicacy, let's look at more modern times, and get up close and personal with two families in South Carolina. They have been honing their skills, turning their mills and using their stone grinders or grist mills to turn corn into grits for centuries.

Our journey begins in Greer with Subers Mill, nestled in the foothills of the Carolinas. The Suber family has been using a water-powered wheel to turn corn into grits and cornmeal since 1908. The operation is so simple and pristine it seems to have a calming effect on those who take a few extra moments to observe the process.

Clockwise from top left: John, Linda and Jim Suber all play a part in making sure quality grits and corn meal make it to their customers' tables.

Mama Suber checks in from time to time to make sure everything is running smoothly.

Jim displays one of the many retail licenses the Suber family has had since the early 1900s.

Four generations of Subers have owned and operated the mill, unique throughout the state in that it uses water for its power, and they continue to run it today. The Suber Mill uses a process where water turns a wheel, which operates a set of pulleys and gears that turns a stone. That stone grinds corn into either grits or meal. Although the corn used at Suber Mill comes from the bluegrass state of Kentucky, the process and people overseeing the grinding are all South Carolina grown.

John, Jim and Linda Suber are all residents of Greer, and each one has a responsibility at the mill. Jim's great grandfather, James Asford Suber, started the process at the mill, and now Jim and Linda, his bride of 48 years, work together to keep bags of grits and meal ready for customers. Linda will even bag it for you while you wait, measuring your bag to the perfect ounce and then handing it to Jim to tie off before she delivers it to you with a smile.

John, Jim's cousin, has been up making rounds by the time Linda makes it to the mill. She often gets teased about her banker's hours. John is up early because every day he walks over 200 yards up the hill to inspect the gates that allow water to travel to the wheel. Each and every evening, beavers dam up those gates so come morning, John has to clear away their hard work from the night before. "I usually end up wet every morning," said John.

John and Jim do the heavy lifting and make sure the corn stays at a working level in the grain feeder. Jim also monitors the amount of water pressure turning the wheel.

"The wheel needs less water pressure when grinding corn into grits and more when making the finer grained corn meal," said Jim, who can easily change the pressure with the adjustment of a lever located just beside the wheel.

Later in the day, the three will sit and chat about current news. They spring into action when gears on the wheel need to be adjusted or a customer stops in.

The Suber family story is not complete until we meet Mama Suber. Willette Suber, who is 93 years young and Jim's mother, keeps a sharp eye on mill operations from her home, right across the street. She still cooks with products from the mill and feeds the family workers lunch every day. The three "kids" say there is not a day that goes by that she does not have freshly made corn bread on the table. "They still show up every day to eat," said Willette Suber proudly.

The power of water

Water from a holding pond travels approximately 200 yards downstream where it hits a wheel, which was updated from wood to metal in 1949. The water turns the wheel and that drives gears, pulleys and shafts, making them slowly turn the grinding stone in the mill. Corn is fed into the chute at the top and makes its way through the grinding stone and out, where it is bagged for patrons.

This mill was purchased from Mr. Lamar Berry. According to the stipulations of the sell, the mill should be used and kept on display, and the Johnsmans say it will never be sold.

Below:
Red and blue corn are grown specifically for Geechie Boy's Jimmy Red and Sea Island Blue grits. They each have a nuttier taste than the white or yellow variety.

Johnsman Grits When asked to give his favorite grits recipe, Greg Johnsman shared a tried and true recipe he said works for his two growing boys. He said they prefer **yellow grits**, which he slow cooks for several hours, adding **heavy cream** occasionally. When the grits are just about perfect, he adds **cooked and crumpled-up sausage**, **cheese** and a can of **Rotel**. ***Pot lickin' good!***

Clockwise from top left:
The Geechie Boy Market and Mill sells more than grits. Jams, sauces, handmade soaps, gifts and souvenirs are all available. Victor, the Johnsman's oldest son, will also give tours.

Grinding grits is a family affair. Katie Stachelek, Betsy's sister, runs one of the mills on the farm where she oversees the milling process, and also bags and moves hundreds of pounds of grits and corn meal daily.

This mill is functional and full of character, taking a little something from each of the five generations it has touched.

Betsy and Greg Johnsman share a love for family, hard work, the land they farm and producing a quality product.

Now let's take a trip south to Johns, Wadmalaw and Edisto islands. Here we find Greg and Betsy Johnsman who, with a love for both farming and milling, have moved the operation of grinding grits into the future, while delicately preserving the tools and intricacies of the manufacturing

process in a way that will keep it viable if either of their two young sons decide to take up the family business.

While the Johnsmans have only been grinding grits since 2007, something they did to supplement their farm income, their Geechie Boy Grits brand now finds a home in restaurants from Maine to California. Of course, they are also found in some of the finest restaurants in South Carolina.

On their farms, one of which is powered by Berkeley Electric Cooperative, Greg and Betsy use as many as nine mills to grind different types of corn into bags of grits. Greg is a self-proclaimed "picky miller" and takes great pride in the quality and flavor of his product. He believes not rushing the process and not producing too much heat during the milling is just part of what makes the grits high quality and full of flavor.

"I listen to the sounds and smells of the mill," he said. "That will tell me if I need to add corn or make some other adjustment." He says the old "keep your nose to the grindstone" saying comes from the old-fashioned milling process that had millers relying on their sense of smell to know if the grinding stone was getting too hot.

While the family farms do not produce all of the corn they use for grits, there are a couple of rare types of corn the Johnsmans grow and use for specialty grits. Jimmy Red and Sea Island Blue grits come from specific types of corn that Johnsman grows on his Lowcountry farms.

"Both the Jimmy Red and Sea Island Blue grits have a slightly nuttier taste than our white or yellow grits," Greg explained.

Word of mouth with chefs far and wide is making the founders of Geechie Boy Grits put farming on the back burner while they turn their attention to milling. Over 160 restaurants currently serve up the Johnsman's product, as close as historic Charleston and as far away as The French Laundry in California.

It is easy to see that South Carolina grits are more than just an average breakfast staple. While they are great with just butter, you can dress them to the nines with cheese, shrimp, peppers, onions, bacon, tomatoes or anything that pleases your palate. Many venues have even gone to offering grits stations when they hold special events, making it even easier to have your grits and garnish them just the way you like.

SOUTH CAROLINA IS HOME TO OTHER MILLS THAT PRODUCE GRITS AND CORNMEAL BY TRADITIONAL METHODS. FOR MORE INFORMATION ON OTHER LOCATIONS IN SOUTH CAROLINA THAT MAKE GRITS, VISIT HTTP://WWW.SCIWAY.NET/SHOP/SC-GRITS.HTML.

Grits Tips

Chef Sean Brock of Husk restaurant is a fierce advocate both for serving (and eating!) the freshest local ingredients and a lover of grits. Read his five tips for serving perfect grits *every time* right here: **http://www.countryliving.com/food-drinks/tips/a6021/sean-brock-grits/**.

WHEN IT COMES TO CEMENT, THEY'RE GIANT

Giant was the first cement company in South Carolina and has been making its product in Dorchester County since 1949.

BY WILLARD STRONG PHOTOGRAPHY BY JIM HUFF

Edmo Gutierrez, the plant manager at Giant Cement Co.'s facility near Harleyville, has a succinct way of expressing how the product is made at the Dorchester County facility.

"Making cement is not rocket science," he said. "It's rock science." And what helps from the get-go is having the "right rocks" near the plant. That's why it's no coincidence that three cement companies have located in the Harleyville and Holly Hill areas of South Carolina.

The attraction? It is the natural limestone formations that were deposited in this part of the world millions of years ago. Near the surface and relatively easy to mine, this soft rock forms the bedrock of a large-scale manufacturing process.

"Eighty-five percent of cement is limestone," Gutierrez said. "We are fortunate to have this resource here."

Giant Cement began operations in the Low-country in 1949 at the site they now occupy, acquiring it from an aluminum manufacturer.

Santee Cooper serves the plant, one of the state-owned electric and water utility's 27 large industrial customers in 10 South Carolina counties. It almost goes without saying that reliable, affordable electricity is key to any successful plant such as Giant's operation, where 130 are on the payroll.

"MAKING CEMENT IS NOT ROCKET SCIENCE. IT'S ROCK SCIENCE."

Clockwise from top:

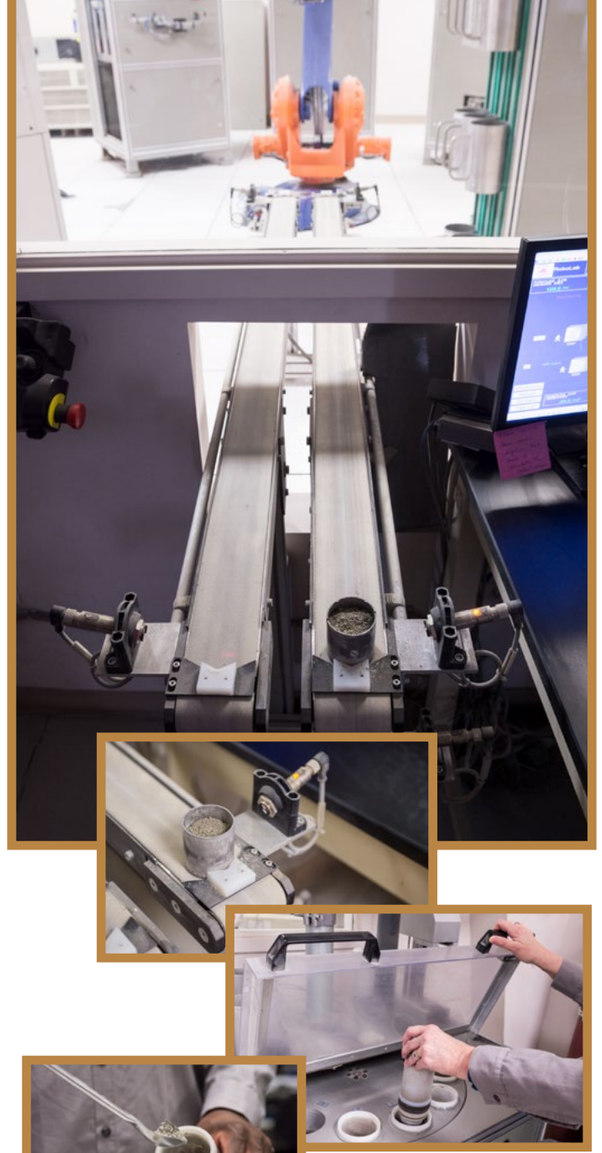
The raw mill, capable of producing 120 tons of cement per hour, is comprised of an array of large and small pipes.

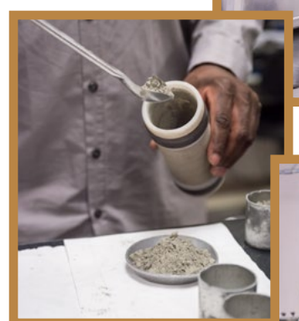
These small hard rocks are known as clinker, which can be ground to a fine powder and used as a binder in many cement products.

Belt conveyors for coal and clinker transport material.

"More than 40 percent of the variable cost to make cement is fuels and power," Gutierrez said. "I think what we have is a very fair price and we have a very good and close relationship with Santee Cooper. I consider Santee Cooper not so much as a supplier, but as a partner. The quality of the power supply is really good, reliable, and consistent. We talk with Santee Cooper on a regular basis and if we need to call upon them, we always get an immediate response."

A large Santee Cooper substation at the site serves Giant and Gutierrez, who has been the plant manager for nearly three years and is a 25-year cement industry veteran, said he is impressed with how Santee Cooper maintains the "sub," the plant's electrical lifeline.





Clockwise from top:

Edmo Gutierrez is Giant Cement Co.'s plant manager.

To assure the highest quality cement, the plant has a state-of-the-art robo lab, where up to 10,000 tests on sample materials are performed monthly.

Testing is being conducted in the robo lab as Quality Control Manager Margaret Myers and Quality Expeditor Benjamin Snell go about their precise work.

"Santee Cooper has been faithful in maintaining the substation, to keep it functioning properly," he said. "This plant has not stopped one single time because of the main substation here."

Good relations with industrial customers just don't happen. Santee Cooper makes a concerted effort to develop those relationships. It starts with Michael Brown, vice president of wholesale and industrial services. David O'Dell is the director of industrial and municipal services. Reporting to O'Dell are Senior Engineer Chad Hutson and Engineer II James Stewart. It is Stewart who is assigned to Giant Cement Co., providing critical one-on-one interface with key plant personnel.

But providing power is by no means the only part of the Giant Cement and Santee Cooper story. When Santee Cooper retired its Jefferies and Grainger generating stations nearly four years ago, it presented an environmental challenge facing many other electric utilities that operate coal-fired plants: the proper and safe disposal of coal ash from decades of service.

This story has a happy ending. Since Jefferies and Grainger stations ceased making megawatts at the end of 2012, the remaining coal ash is being put to good use. Santee Cooper is reclaiming the coal ash from permitted wastewater ponds at those stations. The ash is then screened and transported to cement companies, including Giant. The use of coal ash in concrete improves the strength and durability of materials. This beneficial use of coal ash reduces greenhouse gas emissions, conserves natural resources and decreases land disposal of ash.

Coal ash is also making its way to Giant from Santee Cooper's Winyah Generating Station near Georgetown. In an arrangement with Santee Cooper, The SEFA Group has been transporting coal ash that has been processed at The SEFA Group Inc.'s facility at Winyah Station. The $40 million plant entered commercial op- eration in April 2015.

The process recycles high-carbon fly ash and is projected to produce about 300,000 tons a year, primarily for the concrete industry. It's a proprietary technology called STAR, which stands for Staged Turbulent Air Reactor. Coal ash from Cross Generating Station is also being transported to Winyah for use at the STAR facility.

Giant's coal ash sourcing from Santee Cooper is not insignificant. Right now, approximately 130,000 tons of coal ash from Grainger and Jefferies stations are going to Giant Cement in Harleyville annually.

Santee Cooper's decision on coal ash not only helps Giant Cement in their business model, it ameliorates environmental concern. Environmental groups have praised Santee Cooper for putting their coal ash to good use.

GIANT CEMENT COMPANY CUSTOMERS SERVED BY THE HARLEYVILLE PLANT:

Southern Concrete
St. Wooten Corp.
Kelchner
Plycem
Patriot Ready Mix
Capital Concrete
Carolina Concrete
Ford's Redi Mix
Augusta Ready Mix
Standard Concrete Products
Savannah Ready Mix

What is now termed the "Great Recession" hit the cement industry particularly hard. But with the Lowcountry gaining population and, for example, the big announcement of Volvo locating a car plant in the neighborhood, the demand for cement is on the upswing in this part of the world.

Only about 10 percent of the cement used in the U.S. is imported. The world's top cement-producing nations are China, India, the United States, Iran and Turkey. China is starting up about 20 new cement plants each year. In this country, there are just over 100 cement plants in 36 states, with U.S. annual production now at 83.3 million tons. Worldwide production in 2014 was 4,180 million tons, according to the U.S. Geological Survey.

"Last year," Gutierrez said, "we made 850,000 tons and this year, we project we will make 900,000 tons. It is up 35 percent in the first quarter of this year as compared to last year. In 2017, we are projecting 1.1 million tons and that is the capacity of the plant."

To produce 1 million tons of cement, Gutierrez notes that 10 million tons of material must be processed. That's a lot of material and besides worker safety, being good stewards of the environment is also of paramount importance. About 99 percent of the dust that is created as a result of Giant's manufacturing process is collected, and approximately 30 percent of the cost of a typical cement plant, between $450 and $500 million, goes into environmental protection equipment.

Gutierrez is confident that his workforce is up to the task of maxing out production. If the market conditions for cement continue on the projected trajectory, expanding the Harleyville plant is something that is definitely on the horizon. There are proven limestone reserves for at least the next 50 years, and no reason to doubt that three shifts per day will continue to hum along on schedule.

"We benchmark our cement," is how Gutierrez describes comparing Giant's product to competitors. "Our cement is tops."

With proven performance approaching 70 years of operation, a solid record of being a good corporate citizen and increasing demand for their high-quality product, Giant's future in Dorchester County is very bright.

"This plant is going to grow," Gutierrez said.

GIANT CEMENT COMPANY: FROM EGYPT, PA. TO HARLEYVILLE, S.C.

Source: Giant Cement Co.

The history of Giant Cement Co. can be traced back to the birthplace of the Portland cement industry in the United States, in the Lehigh Valley of northeastern Pennsylvania.

This area not only witnessed the founding of the industry, but it also became the greatest cement producing center of the U.S., producing, at its peak, 75 percent of the output of the country in 1897. Prior to this date, this nation imported most of its cement from Europe.

The Giant Cement Co. connects its roots to the pioneer of cement production in the United States, David O. Saylor. Saylor was a business associate of Robert W. Lesley, who in 1883 formed the American Improved Cements Co. in Egypt, Pa., adjacent to Saylor's company, the Copely Cement Co. A few years later, AICC shortened its name to American Cement Co. In 1914, Giant Portland Cement Co. emerged with the combined assets of the Copely Cement Co. and the American Cement Co.

With the advent of the automobile and people heading south for vacations and warmer weather, the Southeastern U.S. quickly developed a need for new roads, bridges and buildings.

In a strategic move to capitalize on this expansion and to increase the company's market share, Giant Portland Cement Co. executives found a government advertisement for a vacant wartime alumina plant located outside of Harleyville, S.C. In 1947, they purchased the original 1,750 acres and buildings and commenced operations as the Carolina Giant Cement Co.

Giant was the first cement company in South Carolina. During its first year of production, 1949, Giant delivered 110,000 tons of cement to its customers. The quarry covered less than two rural acres. The plant was in a rural area, with S.C. Highway 453 ending at the plant.

It was soon discovered that the soft limestone/marl of South Carolina was much easier to mine than the hard limestone of the Pennsylvania Lehigh Valley, leading to increased production at the new site.

The Harleyville plant went through major expansions in 1952, 1957, 1962 and 1974, including the installation of kilns 2, 3, 4 and 5, as well as the installation of the first baghouse used on a wet kiln. The commissioning of new dry-process kilns replacing the wet-process kilns took place in March 2005.

The Giant Portland Cement Co. closed its Egypt site in 1969. The next year the company's corporate headquarters were moved from Pennsylvania plant to Columbia, S.C. The headquarters moved to the Giant Cement plant in Harleyville in 1985, and then nine years later relocated in Summerville, S.C.

The Fountain of the Muses by Carl Milles, bronze, 1949-1954

Garden of Delights

By Nicole A. Aiello
Photography by Jim Huff

Brookgreen Gardens

is a 501(c)(3) nonprofit with a mission to display figurative sculpture by American artists and to preserve regional plants, animals, and history. Regular admission tickets allow visitors to explore the gardens for seven consecutive days. Those tickets include admission to the gardens, Native Wildlife Zoo, Lowcountry Center and Trail, and the Enchanted Storybook Forest. There are also boat rides, a butterfly house, back road history excursions and special events. ***Visit Brookgreen.org for details.***

Cleome hassleriana, Spider Flower


Neptune by Wheeler Williams, lead, 1939

Donna and Warren Greene have had their fair share of moving, travels and adventures. They have lived in nine states, including Connecticut, Texas and Indiana. They hulaed on the Hawaiian islands, listened to authentic reggae in the Bahamas, strolled the dunes of the Outer Banks and gazed upon the stone reliefs of Mount Rushmore.

After moving to Murrells Inlet seven years ago, the Greenes have found what they consider their personal retreat, with tropical flowers in their front year and the sandy beaches and salt-filled breezes of the Atlantic just a few miles from their home. While they regularly hear the sound of the Sirens calling them to the ocean, there's another paradise nearby that continues to beckon them – Brookgreen Gardens.

"The gardens are breathtaking. There are colorful flowers and foliage, artistry and sculpture, animals and events. You can tell by how well the gardens are manicured and the sculptures are cared for that the people who work here love the gardens as much as we do," said Donna. "It's one of the most beautiful places I've ever seen."

Beautiful may just be an understatement. Besides its beauty, of which there is an abundance, Brookgreen Gardens has a rich and storied past, and the history of the gardens is as interesting as its horticulture.

The History

Brookgreen Gardens sits on the site of four 18th and 19th century plantations and derives its name from one of those, Brookgreen Plantation. One of the others, the Oaks Plantation, was where Joseph Alston (South Carolina Governor from 1812-1814) lived with his wife Theodosia Burr Alston, the daughter of U.S. Vice President Aaron Burr. Theodosia mysteriously disappeared when the ship she was on to visit her father was lost at sea. Scenes from the American Revolution and the Civil War played out on present-day Brookgreen Gardens, and it's said George Washington spent the night there while on his southern tour in the early 1790s. These plantations are also where Golden Big Grain Rice, a precursor to today's long grain rice, was derived.

Although the plantation houses are no longer standing, visitors can see the impressive rice mill chimney, which once belonged to Laurel Hill Plantation, standing like a beacon among the trees. The Springfield Plantation was also housed on the land that's now Brookgreen Gardens.

The Huntingtons

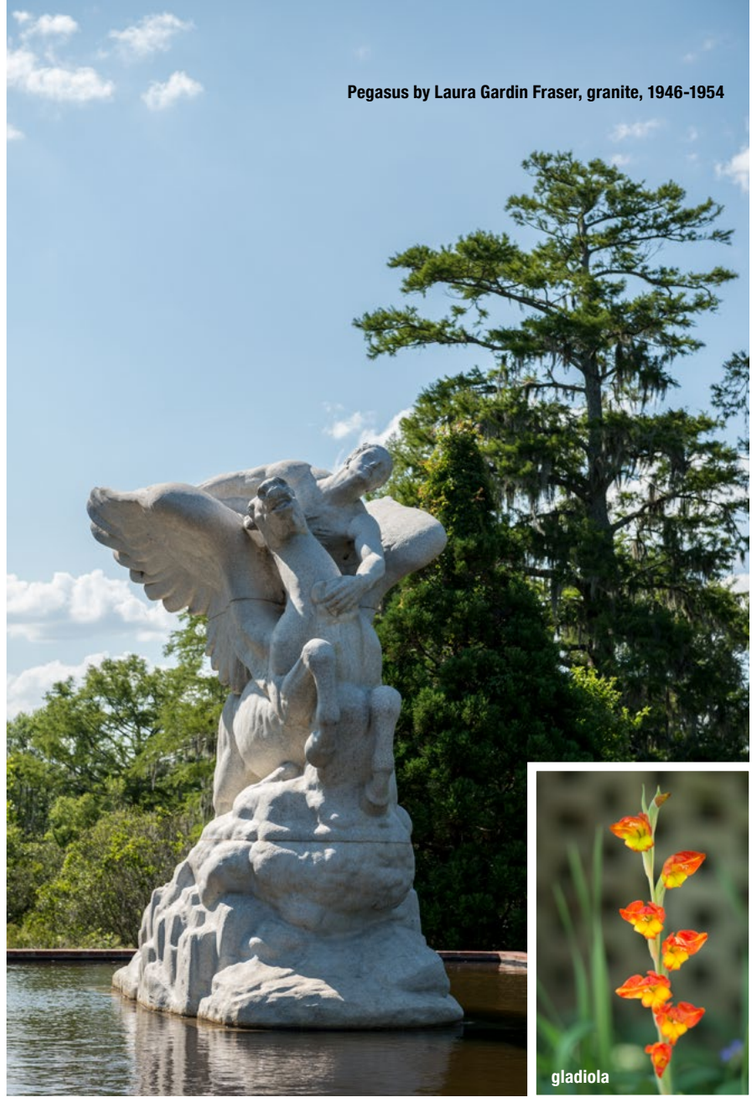
The story of today's Brookgreen Gardens began in the early 1890s when young Anna Vaugn Hyatt was asked by her sister to assist with a sculpture of an animal. Anna's talents were soon uncovered and she began her journey of becoming a prolific and world-renowned sculptor.

Anna was quite an impressive figure. According to Brookgreen.org, Anna was earning more than $50,000 a year with her sculptures by 1912. She is known as one of the finest American animal sculptors of the 20th century and has created work showcased in many private and public locations throughout the country and around the world.

In 1923 at age 43, Anna married heir and philanthropist Archer Milton Huntington. In 1930, they purchased 9,127 acres of property between the Waccamaw River and the Atlantic Ocean. Although it was originally planned to be the winter home of the Huntingtons, due to Anna's struggle with tuberculosis, Anna and Archer fell in love with the area and founded a nonprofit


Bob Jewell


Oak Allée


Pegasus by Laura Gardin Fraser, granite, 1946-1954

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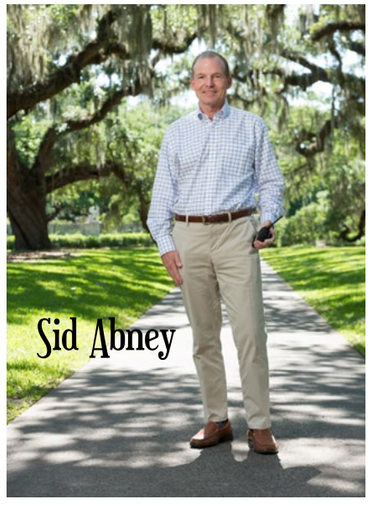
Fighting Stallions
by Anna Hyatt Huntington, aluminum, 1950


Sid Abney

corporation to protect it. Both admirers of art and nature, they decided to use a portion of the land to showcase outdoor sculpture in the midst of native plants and animals. Thus, Brookgreen Gardens was born and opened to the public in 1932.

Horticulture, Sculpture and Wildlife

The gardens are a feast for the eyes and a treat for the senses. They were designed by Anna in the shape of an outstretched butterfly, and her design remains today. Each space in each garden has been meticulously planned and planted, making for interesting, peaceful and dynamic displays with explosions of colors and textures.

Bob Jewell is the president and CEO of Brookgreen Gardens. He is easy with a smile and greets guests, employees and volunteers with a sunny disposition and a word or two of good wishes. Jewell describes Brookgreen as a "national treasure," and his advice to guests is to unwind and enjoy the natural beauty that surrounds them at Brookgreen.

"It's hard to find anything better than this and it's located here, right in Murrells Inlet, South Carolina," Jewell said. "This is the one place you can go without programming every move and having to stick to a schedule. As you look around and take it all in, the peace and beauty of the gardens sort of sinks into your soul. Relax and enjoy it."

Guests like the Greenes do just that. They stroll along the butterfly's wings hand in hand with their families, and take in the seasonal blooms that Katherine Rowe, manager of horticulture for Brookgreen Gardens, and the horticultural teams painstakingly plan, organize, plant and nurture.

"No two days are ever the same at Brookgreen Gardens, as new flowers bloom daily and the horticultural exhibits change frequently," Rowe explained. "We have a great team of horticulturalists, and we have a lot of creative freedom with planning and designing. We have both small scale and larger scale renovations, and a lot of day-to-day maintenance. We also make sure we're designing spaces so they complement the natural environment and enhance the experience of viewing the sculptures."

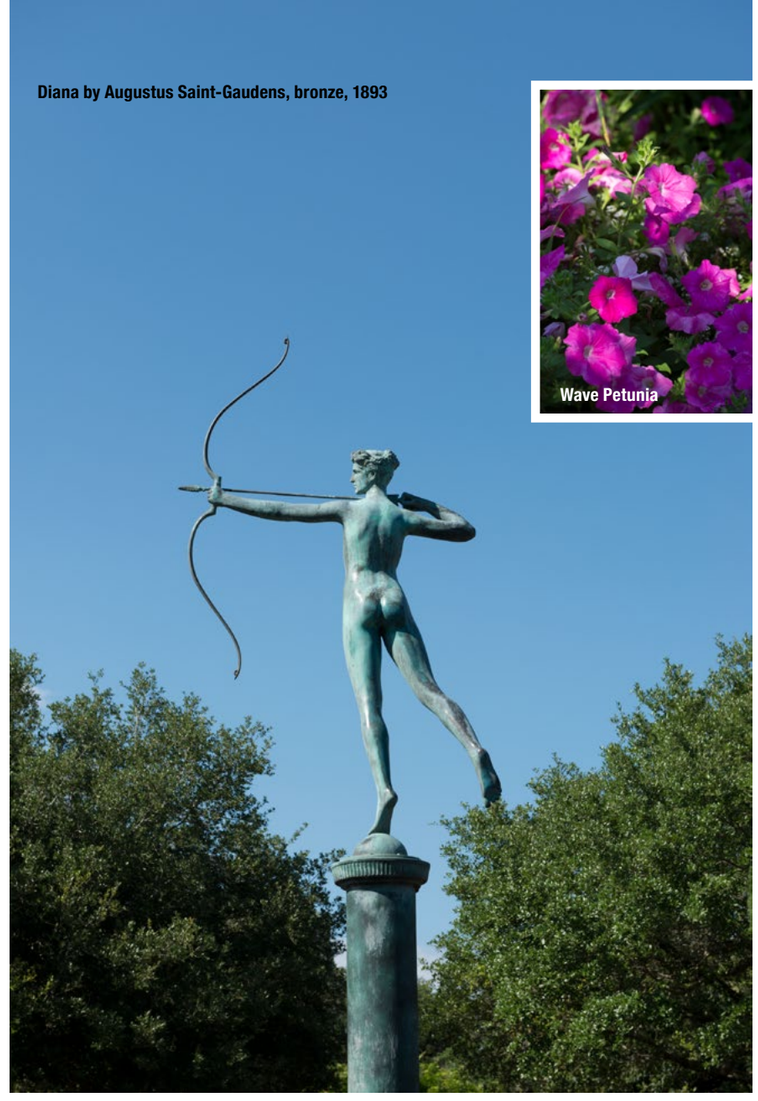
Rowe said the changes in the gardens keep them interesting and new for guests and for employees. Her favorite areas of the gardens change regularly, although she said her all-time favorite part of the gardens is the stately live Oak Allée, where these goliaths with their moss curtains transport guests back to another time and place.

Most importantly, Rowe explained, "People are really very happy when they're here."

Sid Abney also believes that guests' enjoyment of the gardens is of utmost importance. Abney, manager of guest services, and his staff and volunteers greet guests as they enter the gate, assist with tickets, answer questions at the welcome center and lead garden tours. He said first-time visitors are usually surprised at everything Brookgreen has to offer – interesting history, beautiful gardens, amazing sculpture, old rice fields and even a zoo.

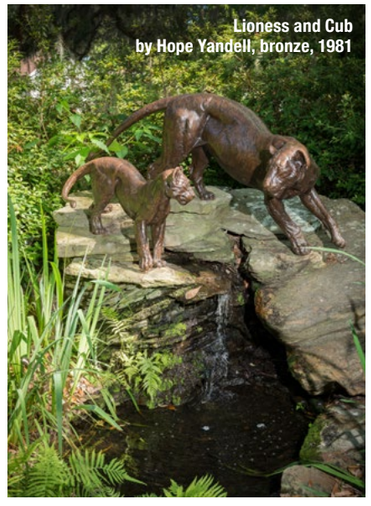
"People never get tired of seeing the beauty of the gardens. There's a blend of beauty, nature and history you don't find everywhere," he said. "It's our own little piece of paradise."

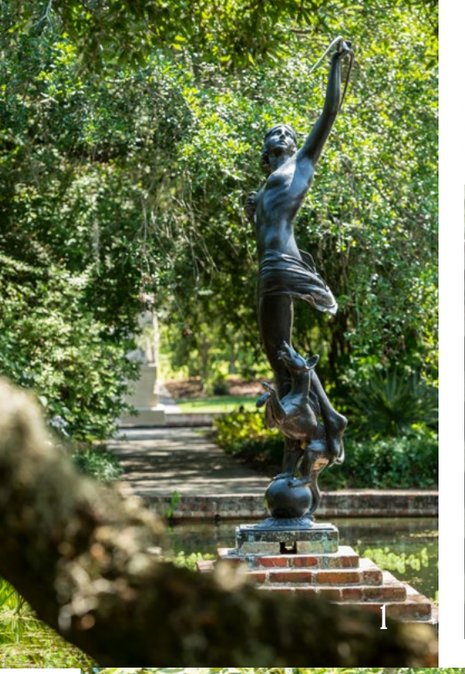
The uniqueness of the gardens not only comes from its horticulture, but also from the fact that it's an outdoor sculpture garden. The sculpture collection exhibited within the gardens is the largest and most comprehensive collection of American figurative sculpture in an outdoor setting


Diana by Augustus Saint-Gaudens, bronze, 1893

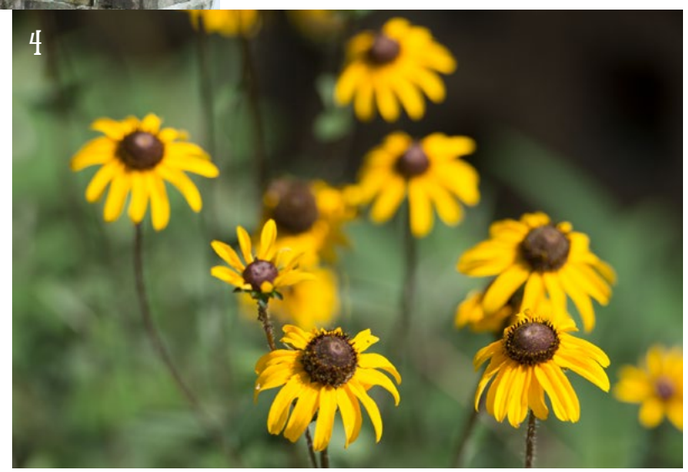
Wave Petunia


Katherine Rowe
hydrangea macrophylla, Mophead Hydrangea


Lioness and Cub
by Hope Yandell, bronze, 1981



1. Diana of the Chase by Anna Hyatt Huntington, bronze, 1922; 2. Loie Fuller: Vortex by Barbara Lekberg, bronze; 3. Alligator Bender by Nathaniel Choate, Italian marble, 1937; 4. Rudbeckia fulgida, Black-eyed Susan; 5. Shell Boy by Avard Fairbanks, bronze, 1933; 6. Orpheus and Eurydice by Nathaniel Choate, bronze, c. 1952



in the United States, and ranges from the early 19th century to present day. More than 1,400 works by 350 artists are integrated throughout the indigenous and exotic flowers and foliage.

Many of the sculptures interspersed around Brookgreen are Anna Hyatt Huntington's. Some sculptures, like those in the Children's Garden, are whimsical and coy, peaking out behind trees or frolicking among the flowers. Said Rowe, "The big pig sculpture, Eat More Beef by Sandy Scott, makes quite an impression on both children and adults."

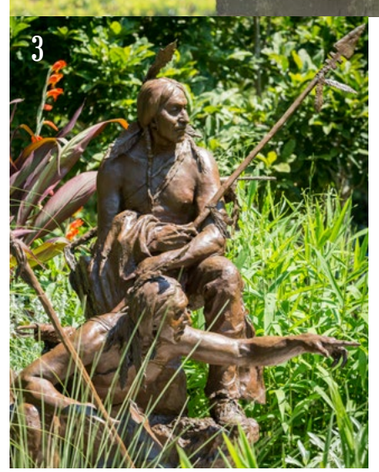
Others, like the Fighting Stallions by Anna Hyatt Huntington that greets guests at the entrance, are powerful, striking and larger than life. And the Fountain of the Muses by Carl Milles, a favorite amongst guests, has figures that leap over the waters of one of the many fountains dotting the grounds.

Along with numerous awards and recognitions, Brookgreen has earned accreditation from both the American Alliance of Museums and the Association of Zoos and Aquariums. It is also designated a National Historic Landmark and listed on the National Register of Historic Places.

The awards and recognitions are well deserved, but most visitors come for the unique experience that is Brookgreen Gardens, a historic and cultural center that exudes folly, peace and poetry. As their tagline reads, Brookgreen Gardens is "Ever Changing. Simply Amazing."

"I don't know if there's any other place in the world like Brookgreen," said Abney.

1. Dionysus by Edward McCartan, gold-leaf on bronze, 1936; 2. Eat More Beef by Sandy Scott, bronze; 3. Call of the Bison by Herb Mignery, bronze, 2005, long-term loan from the Collection of Tia, Santa Fe, NM



Spring Mini-Bond Sale Largest Yet

This spring's Mini-Bond sale, which took place in April, was the largest, most successful Mini-Bond sale in Santee Cooper history, totaling $42,142,700 from 2,297 separate purchases. Current Interest Bearing Bonds were offered in $500 denominations, while Capital Appreciation Bonds were offered in $200 denominations. The maximum purchase was capped at $50,000 per individual.

"Santee Cooper Mini-Bonds give investors an easy and unique way to enhance their portfolios," said Lonnie Carter, Santee Cooper president and CEO. "In addition to being an easy investment opportunity, Mini-Bonds also help Santee Cooper fulfill our responsibility to provide South Carolina with low-cost, reliable and environmentally protective electricity."

Richard Carroll Elementary becomes 28th Green Power Solar School

On April 29, the Bamberg Department of Public Works, Bamberg School District 1 and Santee Cooper dedicated Richard Carroll Elementary as a Green Power Solar School, making it the 28th Solar School in the state. The school was equipped with a solar cell array that is producing electricity from the sun's rays, providing students with a firsthand look at the opportunities and challenges of solar power.

Green Power powered RBC Heritage eight years in a row

PGA TOUR members know what it's like to swing for the green, and so do Palmetto Electric Cooperative and Santee Cooper. For the last eight years, they have joined forces with the RBC Heritage Presented By Boeing Golf Tournament to make each swing a little greener – with 100 percent Green Power.

RBC Heritage used Santee Cooper Green Power from Palmetto Electric Cooperative for the duration of the 2016 tournament, which was played April 11-17 at Harbour Town Golf Links on Hilton Head Island. The tournament was the first major Green Power event in the state, back in 2009. Green Power is Green-e Certified and meets the environmental and consumer-protection standards set forth by the nonprofit Center for Resource Solutions. Learn more at www.green-e.org.

Results from Santee Cooper Lineworkers Rodeo

Spectators gathered at Old Santee Canal Park on March 19 to watch the 19th annual Santee Cooper Lineworkers' Rodeo. The event united Santee Cooper with seven electric cooperatives in the area, and they competed in a course of events designed to test their skills in a fun and safe environment. Overall results are as follows:

APPRENTICE – *OVERALL*
1st place: Sport Rabon (Santee Cooper)
2nd place: Justin Sutherland (Black River Electric Cooperative)
3rd place: Michael Sims (Black River Electric Cooperative)

JOURNEYMAN – *OVERALL*
1st place: Chad Williams, Joe Sawyer, Drew Jordan (Santee Cooper)
2nd place: Kevin Rhode, Jay Ayers, Johnny Brinson (Santee Cooper)
3rd place: Chad Davidson, Jay Bagwell, Clay Crawford (Black River Electric Cooperative)

Summer Operating Hours for Pinopolis Lock announced

Spring and summer hours are 9 a.m. to 7:30 p.m. for the Pinopolis Lock at the Jefferies Hydroelectric Station on Lake Moultrie. Digital signage at the lock will display the current operating status.

The lock does not operate during thunderstorms or rough-water conditions. Occasionally, it is necessary to take the lock out of service for periodic maintenance or repair. If you have a large party of boats, you are encouraged to call in advance. The telephone number is 843-899-LOCK (5625).

Overton Beach Park is open for summer

The 400-foot beachfront swimming area at Santee Cooper's Overton Beach Park, located on Lake Moultrie five miles north of Moncks Corner, is open daily to the public from 10 a.m. to 6 p.m., with certified lifeguards on duty. Days will be limited to weekends (10 a.m. to 6 p.m.) once Berkeley County schools resume in August.

Admission is $2 per person for ages 4 and up. A $40 family season pass allows unlimited admission for up to four people per vehicle. Annual passes to Old Santee Canal Park are not valid at Overton. For more information and directions, call Overton Park at 843-761-8039, Old Santee Canal Park at 843-899-5200, or visit www.santeecooper.com.

Off On New Adventures

James M. “Jim” Huff, Santee Cooper’s official corporate photographer since August 1987, retired on June 30.

The outstanding images that have graced the covers and stories of PowerSource since its inception in 2001 are the result of Jim’s work. He brought a lifelong passion and commitment to excellence in his chosen field of professional photography.

A Greenville native, Jim is a graduate of the University of South Carolina’s School of Journalism and Mass Communications. He was employed by his alma mater for a number of years, and he also worked for the State Development Board, which today is the S.C. Department of Commerce.

In his years at Santee Cooper, Jim chronicled the construction and expansion of generating stations, the creation of two regional water systems, and dozens of economic development ground breakings and ribbon cuttings.

Annual reports, employee newsletters and awareness campaigns are also part of his extensive portfolio. He took photos of everyone from board members and members of executive leadership to Santee Cooper employees of every job title and rank prior to their retirement.

And it is now Jim who has closed this chapter of his life. Santee Cooper has been greatly enriched by the fruits of his artistic labor. He never took lightly his responsibility to present his employer with artistry and accuracy, and the legacy of his work will endure for generations to come. Corporate Communications and Santee Cooper wish him and his wife, Jane, all the best.

Business Briefly

Viva Holdings Group Inc. launching new operations in St. Stephen

Viva Holdings Group Inc. announced on May 12 that it is launching a new operation in Berkeley County and will be renovating a 177,000-square-foot industrial site in St. Stephen. The first phase of the new development is expected to bring a $28 million investment and employ up to 200 people with the potential for additional expansion.

Viva Holdings Group Inc., through its subsidiary Viva TPE Products, LLC, is a manufacturer of semi-finished rubber goods with proprietary technology for export to China, along with a variety of injection-molded finished products. The company's proprietary technologies use a combination of recycled rubber and recycled plastics from post-industrial and post-consumer sources.

Executive HeliJet Expanding Operations in Horry County

Executive HeliJet, a local maintenance, repair and completion center for aircraft, on May 17 announced expansion plans in Horry County. The company will add 75 new, full-time jobs to their current operations, investing approximately $1 million dollars in equipment and facility improvements over a five-year period.

The company will hire maintenance repair technician, operators, skilled craftsmen, and managerial, professional and technical support. These jobs will pay an average of $20.55 per hour with employee benefits. Executive HeliJet is currently a tenant at the North Myrtle Beach Airport and the Myrtle Beach International Airport and with this expansion plans to lease additional space at Myrtle Beach International Airport.

Groundbreaking ceremony takes place at new Charleston Trade Center in Summerville

On April 19, officials from South Carolina Department of Commerce, Berkeley County, Charleston Regional Development Alliance and South Carolina Ports Authority joined The Keith Corp of Charlotte and its financial partner, Singerman Real Estate of Chicago, in a groundbreaking ceremony for the Charleston Trade Center in Summerville.

The Keith Corp and Singerman Real Estate are investing $19 million to begin the first phase of the industrial park with a 307,350-square-foot, speculative shell building. The speculative building is scheduled to be complete by the end of this year and could be expanded to more than 923,000 square feet in the future.

The new business park, powered by Berkeley Electric Cooperative and located off of I-26 near the under-construction Sheep Island Interchange at mile marker 197, is estimated to cost $175 million and could hold up to six industrial buildings.